CITY OF
Fremont

Revised July 7th, 2011

Project Address_____

Inspector_____

# City of Fremont Residential PV Inspection Checklist

**FIRST INSPECTION -Rough Frame mounting Flashing (Insp Code #133) & Rough Electrical (Insp code #204)**

| | Yes | No | |
|---|---|---|---|
| 1 | | | For Systems under 4Kw DC Field plan review will be done before inspection begins |
| 2 | | | Approved Plans, Permits and Installation instructions for ALL components on-site and available (Required for ALL subsequent inspections) |
| 3 | | | Mounting System - Installed per plan ***(Rough frame and Elec. inspection required before module install) NOTE: Be prepared to show fasteners for mounting system at this time.*** |
| 4 | | | Verify Flashing and Counter Flashing ***(Progress inspection required before covering)*** |
| 5 | | | Clearance to roof edges per State Fire Marshall guidelines- as noted on plans |
| 6 | | | All Combiners, junction boxes, and equipment Shall be opened and ready for inspection upon arrival ***NOTE: required when J-boxes and combiners located under array*** |
| 7 | | | String overcurrent protection is sized adequately and rated for DC voltage (check calcs if 3 or more strings being combined) |
| 8 | | | Conductor type and ampacity - Listed for wet locations and rated, 90°C |
| 9 | | | Bonding of Rack Mounting System done per listing of modules |
| 10 | | | Access to attic area required to verify roof framing matches plan and check structural upgrdes where applicable. |

**Yes No FINAL INSPECTION (insp code #199)**

**ROOF TOP INSPECTION**

| | | | |
|---|---|---|---|
| 1 | | | All Combiners, junction boxes, and equipment **Shall be opened and ready for inspection upon arrival** (not required if combiners and J-boxes under array and inspected at rough electrical) |
| 2 | | | Number and Type of modules matches plan (check nameplate tag under modules against plan) |
| 3 | | | Clearance from Plumbing Vents - Vent diameter x2 clear from bottom of modules |
| 4 | | | Bonding of modules are per Mfr's inst.instructions - CEC 690.43,45 250.134,136(A) |
| 5 | | | Equipment Grounding Conductor - Sized according to Table 250.122 - CEC 690.43 |
| 6 | | | Wire management - All cables must be secured and protected from physical damage (i.e. NO conductors/cables laying on roof or hanging below modules) |
| | | | **GROUND INSPECTION** |
| 7 | | | AC and DC Disconnects located within sight and 10' of Inverter - ***Required for all installations with or without integrated disconnects in inverter*** |
| 8 | | | Electrical Line Diagram matches Plan - Verify conductor and overcurrent protection sizing |
| 9 | | | Verify Exisitng Grounding Electrode System - If no existing Grounding Electrode System all available grounding electrodes shall be used (e.g. underground metal water service, ufer, etc.) A ground rod may be used if no other electrodes are present. |
| 10 | | | PV System Grounding Electrode - Use methods allowed in CEC 690.47 C |
| 11 | | | Grounding Electrode Conductor - GEC sized in accordance with Table 250.66 CEC 690.47 C (GEC's run in ferrous metal raceways shall be bonded where they enter and exit racway into any enclosure or disconnect) |
| 12 | | | Inverter type and model match plan - Installed per Mfr's Instructions |
| 13 | | | PV conductors run inside the a structure must be contained within a metallic raceway and labeled with "Caution Solar Circuit" (see required signs) |
| 14 | | | Verify CO alarms and smoke detectors installed |

## Required Inspections

*A ladder is required for all inspections and shall extend 3' above edge and be secured at the top.*

***Provisions shall be made to verify the information located on the modules and equipment on rooftops. Inspectors will inspect rooftops from the ladder only. Since Inspectors are restricted from walking on roofs, provisions to show attachment, wiring, bonding/grounding, and module and equipment labeling and installation must be made. Digital Camera images may be used to satisfy this requirement and Inspectors WILL require Contractors to take photos during the course of the inspection.***

***Note: Failure to comply with the above inspection requirements May result in re-inspection fees.***

***NOTE:Verification that the Exisiting Main Service Panel is Safe and free of Electrical hazards - If unsafe Owner shall have to have a licensed electrician correct or replace equipment.***

***NOTE: The City of Fremont Building Division requires separate AC and DC Disconnects allow for safe servicing or replacement of all equipment in PV System - AC Point of connection is suitable for AC disconnecting means if within sight and 10' of inverter.***

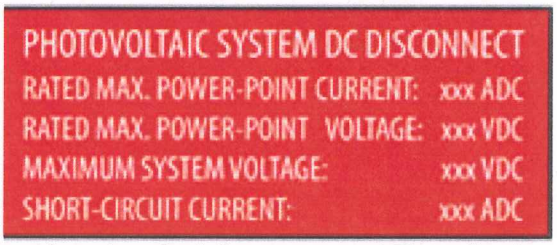
## SIGNS AND LABELS

**All Signs Shall be red background and white lettering. For outdoor installations they shall be engraved phenolic plastic type. Labels on raceways and other equipment shall be reflective, weather resistant, and suitable for the environment. If signs noted on plans differ from this sheet this sheet shall apply.**

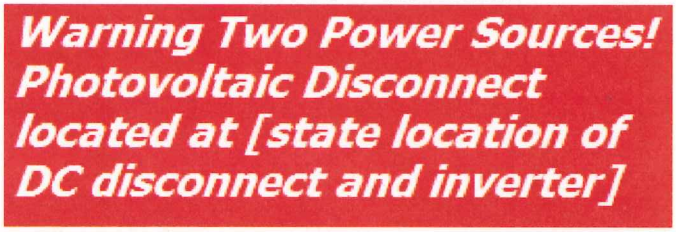
All Raceways and DC Combiner Boxes labeled ***"Caution: Solar Circuit"*** every 10' and changes in direction - Cal Fire/Fremont Muni Code Minimum letter size 3/8"


Ground Fault Warning Sign on Inverter - 690.5


Field marked sign(s) on DC Disconnect(s) - CEC 690.53 OCPD




Main Service Panel and Inverter - Install a permanent Phenolic plaque at the service entrance equipment denoting all electrical power sources and their location on front of the service equipment. A plaque shall be located on the inverter with the location of the main service equipment if not within sight. **Size 3"x4"** - CEC 705.10




All junction and combinber boxes


AC Disconnect - CEC 690.17